UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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ART UNIT	PAPER NUMBER
2141	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/872,920	CHANDRA ET AL.
	Examiner	Art Unit
	Kristie Shingles	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 January 2006</u>.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-42* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☐ Claim(s) *1-42* is/are rejected.

7) ☒ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant amended claims 1, 7, 12, 15, 16, 20, 24, 28, 34 and 39.

Claims 1-42 are pending.

Response to Arguments

1.   Applicant's arguments with respect to claims 1, 7, 12, 16, 20, 24, 28, 34 and 39 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.   **Claims 1-11 and 28-38** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added limitation, "wherein the receiving, the determining, the clearing and the synchronizing are performed within a further process" of independent claims 1 and 28; and the additional limitation, "wherein the detecting, the restarting, the restoring the synchronizing and the clearing are performed within a further process" of independent claims 7

and 34 are not supported in Applicant's specification. The claims dependent on claims 1, 7, 28

and 34 are therefore rejected likewise.

Claim Objections

4.   <u>Claims 3, 7 and 34</u> are objected to because of the following informalities:

- **Claim 3,** is missing the independent claim number in line 1. The claim language should read, "The computer implemented <u>method</u> of claim <u>1</u>...". Appropriate correction is required.

- **Claim 7,** in line 10, a comma should be inserted between "the restoring" and "the synchronizing" since these features are listed in series. Appropriate correction is required.

- **Claim 34,** in line 12, a comma should be inserted between "the restoring" and "the synchronizing" since these features are listed in series. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   <u>Claims 1-11 and 28-42</u> are rejected under 35 U.S.C. 103(a) as being unpatentable over

Klecka et al (USPN 6,393,582) in view of *Applicant Admitted Prior Art* (hereafter referred to as,

AAPA).

a.   **Regarding claims 1 and 28,** *Klecka et al* teach a computer implemented method

and machine-readable medium comprising:

- receiving a first set of data from a network process (col.1 line 60-col.2 line 3, col.2 line 12-31, col.6 line 22-36; receives interrupt divergence status signal and the present processor state);

- determining death of the network process (Abstract, col.2 lines 1-19, col.3 lines 32-44, col.5 lines 6-36, col.6 line 37-col.7 line 3, col.8 lines 35-49 provision for determining processing errors and divergence);

- clearing the first set of data if a time period expires (col.2 lines 14-17, col.4 lines 32-34, col.10 lines 6-10; if the timer expires the processor will experience a hard reset and reboot operation); and

- synchronizing the first set of data with a second set of data if the time period does not expire, the second set of data received from the network process after the network process restarts (col.1 line 60-col.2 line 3, col.2 line 12-31, col.6 line 22-36, col.7 lines 8-47, col.8 lines 30-34 and 42-49; the present processor state is saved to memory, the processor is then reset, reinitialized and re-loaded with the prior saved state)

- wherein the receiving, the determining, the clearing and the synchronizing are performed within a further process (col.7 lines 8-47, col.8 lines 30-34 and 42-49).

Although *Klecka et al* teach the determination of divergent error conditions and

subjecting the processor to a hard reset and reboot operation when the timer times-out (Abstract,

col.2 lines 1-19, col.3 lines 32-44, col.4 lines 32-34 col.5 lines 6-36, col.6 line 37-col.7 line 3,

col.8 lines 35-49, col.10 lines 6-10), *Klecka et al* fail teach to explicitly teach determining death

of the network process and clearing the first set of data if a time period expires. However, *AAPA*

teaches receiving a first set of data from a network process; determining death of the network

process; clearing the first set of data if a time period expires (paragraphs 0002, 0005-0009).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the error self-checking and recovery system of *Klecka et al* with *AAPA* in

order to clear the first set of data of the dead process if a time period expires because this data is invalid and this prevents the system from processing invalid or corrupted data.

    b.   **Regarding claims 7 and 34,** *Klecka et al* teach a computer implemented method and machine-readable medium comprising:

- detecting death of a network process (Abstract, col.2 lines 1-19, col.3 lines 32-44, col.5 lines 6-36, col.6 line 37-col.7 line 3, col.8 lines 35-49 provision for determining processing errors and divergence);

- restarting the network process (Abstract, col.2 lines 21-25);

- restoring a set of configurations to the network process (col.1 lines 64-65, col.8 lines 42-49; provision for re-initializing);

- if a first set of data is generated by the network process before a time period expires, then synchronizing the first set of data with a second set of data, the second set of data having been generated before the death of the network process (col.1 line 60-col.2 line 3, col.2 line 12-31, col.6 line 22-36, col.7 lines 8-47, col.8 lines 30-34 and 42-49); and

Although *Klecka et al* teach the determination of divergent error conditions and subjecting the processor to a hard reset and reboot operation when the timer times-out (Abstract, col.2 lines 1-19, col.3 lines 32-44, col.4 lines 32-34 col.5 lines 6-36, col.6 line 37-col.7 line 3, col.8 lines 35-49, col.10 lines 6-10), *Klecka et al* fail teach to explicitly teach death of a network process and if the time period expires, then clearing the second set of data. However, *AAPA* teaches if the time period expires, then clearing the second set of data (paragraphs 0002 and 0005-0009). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the error self-checking and recovery system of *Klecka et al* with *AAPA* wherein then the second set of data is cleared if the time period expires, because this data is invalid and this prevents the system from processing invalid data because this data is invalid and this prevents the system from processing invalid data.

c.   **Claim 39** contains limitations that are substantially equivalent to claims 1 and 7 and is therefore rejected under the same basis.

d.   **Regarding claims 2 and 29,** *Klecka et al* and *AAPA* teach the computer implemented method of claim 1, *AAPA* further teach the method further comprising indicating the first set of data as stale when the network process is determined to be dead (paragraphs 0002 and 0006-0009).

e.   **Regarding claims 3, 9, 30 and 36,** *Klecka et al* and *AAPA* teach the computer implemented method of claim 1, *AAPA* further teach the method further comprising wherein expiration of the time period is determined with a timer maintained after the network process is determined to be dead (paragraphs 0002 and 0006-0007; *Klecka et al*: col.2 lines 12-19, col.4 lines 28-39).

f.   **Regarding claims 6, 11, 33 and 38,** *Klecka et al* and *AAPA* teach the computer implemented method of claim 1, *AAPA* further teach the method wherein further comprising clearing the second set of data if the time period expires and a done signal is not received (paragraphs 0002 and 0006-0007).

g.   **Regarding claims 8 and 35,** *Klecka et al* and *AAPA* teach the computer implemented method of claim 1, *AAPA* further teach the method teaches indicating the second set of data as stale when the network process is detected as dead (paragraphs 0002 and 0006-0009).

h.   **Regarding claim 40,** *Klecka et al* and *AAPA* teach the method of claim 39, *AAPA* further teaches the method wherein the timer is initialized upon receipt of the death notification (paragraphs 0002 and 0006-0009; *Klecka et al*: col.10 lines 1-10).

i.   **Regarding claim 41,** *Klecka et al* and *AAPA* teach the method of claim 40, *AAPA*

further teaches the method wherein the death notification is based on an absence of a heartbeat

from the second network process (paragraphs 0002 and 0006-0009).

j.   **Regarding claim 42,** *Klecka et al* and *AAPA* teach the method of claim 39,

AAPA further teaches the method further comprising clearing the stale data and the new data if

the timer expires before the done signal is received (paragraphs 0002 and 0006-0009).

k.   **Regarding claims 4, 10, 31, and 37,** *Klecka et al* and *AAPA* teach the computer

implemented method of claim 1, *Klecka et al* further teach the method wherein the first set of

data and the second set of data are synchronized after a done signal is received (col.2 lines 20-31,

col.5 lines 19-25, col.6 lines 19-36, col.7 lines 26-29).

l.   **Regarding claims 5 and 32,** *Klecka et al* and *AAPA* teach the computer

implemented method of claim 1, *Klecka et al* further teach the method further comprising

restoring a set of configurations to the network process after the network process restarts (col.1

lines 64-65, col.8 lines 42-49).

7.   **Claims 12-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kidder et*

al (USPN 6,694,450) in view of *Miller et al* (USPN 6,049,838).

a.   **Regarding claim 12,** *Kidder et al* teach a network element comprising:

- a cross connect control module to host a first and second network process, the
  first network process to generate a first set of data after restarting and the second
  network process to synchronize for itself the first set of data with a second set of
  data generated by the first network process before restarting (col.3 lines 42-52,
  col.3 line 63-col.4 line 6, col.42,line 66-col.43 line 12); and

- a traffic card coupled to the cross connect module, the traffic card to process a set of traffic with the synchronized first and second set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42,line 66-col.43 line 12).

Kidder et al fail to explicitly teach the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting upon determining a time period has not expired, the time period beginning when the first network process dies. However, *Miller et al* teach the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting (Abstract, col.4 lines 22-26, col.5 lines 17-27 and 38-42, col.8 lines 30-35, col.13 lines 33-40) upon determining a time period has not expired, the time period beginning when the first network process dies (col.5 lines 44-52, col.13 lines 7-17, col.14 lines 2-16). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed process redundancy of *Kidder et al* with *Miller et al* by having the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting upon determining a time period has not expired, the time period beginning when the first network process dies; because this allows to system to only maintain fresh information versus synchronizing stale information with current information.

b.   **Regarding claim 16,** *Kidder et al* teach a network element comprising: a first processor to execute a first and second network process, the first network process to generate a first set of data before restarting and a second set of data after restarting, the second network process to synchronize for itself the first and second set of data; and a second processor coupled to the first processor, the second processor to process a set of traffic using the first set of data

before the first network process restarts and the third set of data after the first network process restarts (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

Kidder et al fail to explicitly teach the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting upon determining a time period has not expired, the time period beginning when the first network process dies. However, *Miller et al* teach the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting (Abstract, col.4 lines 22-26, col.5 lines 17-27 and 38-42, col.8 lines 30-35, col.13 lines 33-40) upon determining a time period has not expired, the time period beginning when the first network process dies (col.5 lines 44-52, col.13 lines 7-17, col.14 lines 2-16). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed process redundancy of *Kidder et al* with *Miller et al* by having the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting upon determining a time period has not expired, the time period beginning when the first network process dies because this allows to system to only maintain fresh information versus synchronizing stale information with current information.

c.   **Regarding claim 20,** *Kidder et al* teach a network element comprising: a first memory to host a first network process, the first network process to generate a first set of data before restarting and a second set of data after restarting; a second memory coupled to the first memory, the second memory to host a second network process, the second network process using the first and second set of data; and a third memory coupled to the first and second memory, the third memory to store the first set of data before the first network processes restarts

and to store for itself a synchronized set of the first and second set of data after the first network process restarts (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

Kidder et al fail to explicitly teach the second network process using the first and second set of data if a time period has not expired, the time period beginning when the first network process dies. However, *Miller et al* teach the second network process using the first and second set of data if a time period has not expired, the time period beginning when the first network process dies (Abstract, col.4 lines 22-26, col.5 lines 17-27 and 38-42, col.8 lines 30-35, col.13 lines 33-40) upon determining a time period has not expired, the time period beginning when the first network process dies (col.5 lines 44-52, col.13 lines 7-17, col.14 lines 2-16). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed process redundancy of *Kidder et al* with *Miller et al* by having the second network process using the first and second set of data if a time period has not expired, the time period beginning when the first network process dies because this allows to system to only maintain fresh information versus synchronizing stale information with current information.

    d.   **Regarding claim 24,** *Kidder et al* teach a system comprising: a first network element to execute a first network process the first network process to generate a first set of data before restarting and a second set of data after restarting; and a second network element coupled to the first network element, the second network element to execute a second network process, to determine the first network process died, to start a counter upon determining the first network process has died, to store the first and second set of data, and to synchronize for itself the first and second set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

        Kidder et al fail to explicitly teach to synchronize the first and second set of data upon determining the counter has not exceeded a time period. However, *Miller et al* teach to synchronize the first and second set of data upon determining the counter has not exceeded a time period (Abstract, col.4 lines 22-26, col.5 lines 17-27 and 38-42, col.8 lines 30-35, col.13 lines 33-40) upon determining a time period has not expired, the time period beginning when the first network process dies (col.5 lines 44-52, col.13 lines 7-17, col.14 lines 2-16). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed process redundancy of *Kidder et al* with *Miller et al* by to synchronize the first and second set of data upon determining the counter has not exceeded a time period because this allows to system to only maintain fresh information versus synchronizing stale information with current information.

    e.   **Regarding claim 13,** *Kidder et al* and *Miller et al* teach the network element of claim 12, *Kidder et al* further teach the element wherein the cross connect module comprises a first and second memory to host the first and second network process (col.3 lines 42-52, col.3 line 63-col.4 line 6).

f.   **Regarding claim 14,** *Kidder et al* and *Miller et al* teach the network element of claim 12, *Kidder et al* further teach the element wherein the traffic card comprises a set of processors to process the first and second set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6).

g.   **Regarding claim 15,** *Kidder et al* and *Miller et al* teach the network element of claim 12, *Kidder et al* further teach the element wherein the cross connect module comprises: a first memory to host the first network process; a second memory coupled to the first memory, the second memory to host the second network process; and a third memory coupled to the first and second memory, the third memory to store the first set of data, second set of data, and the synchronized set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

h.   **Regarding claim 17,** *Kidder et al* and *Miller et al* teach the network element of claim 16, *Kidder et al* further teach the element wherein the first processor comprises a memory to store the first, second and third set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6).

i.   **Regarding claim 18,** *Kidder et al* and *Miller et al* teach the network element of claim 16, *Kidder et al* further teach the element further comprising the first processor to allocate a first memory to the first network process and a second memory to the second network process (col.3 lines 42-52, col.3 line 63-col.4 line 6).

j.   **Regarding claim 19,** *Kidder et al* and *Miller et al* teach the network element of claim 16, *Kidder et al* further teach the element further comprising the first processor to allocate a first memory to the first network process, a second memory to the second network process, and

a third memory to store the first set of data, the second set of data, and the third set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

k. **Regarding claim 21,** *Kidder et al* and *Miller et al* teach the network element of claim 20, *Kidder et al* further teach the element wherein the first memory, the second memory and the third memory are main memory (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

l. **Regarding claim 22,** *Kidder et al* and *Miller et al* teach the network element of claim 20, *Kidder et al* further teach the element wherein the first memory, the second memory, and the third memory are mass storage (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

m. **Regarding claim 23,** *Kidder et al* and *Miller et al* teach the network element of claim 20, *Kidder et al* further teach the element wherein the first memory, the second memory, and the third memory are a set of regions of a memory (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

n. **Regarding claim 25,** *Kidder et al* and *Miller et al* teach the network element of claim 24, *Kidder et al* further teach the element wherein the second network element comprises: a first memory to store the first set of data and the synchronized set of data; and a second memory to store the second set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6).

8. **Claims 26 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kidder et al* (USPN 6,694,450) in view of *Miller et al* (USPN 6,049,838) and further in view of *Applicant Admitted Prior Art* (hereafter referred to as, *AAPA*).

a.   **Regarding claim 26,** *Kidder et al* and *Miller et al* teach the system of claim 24 as

applied above, yet fail to explicitly teach the system further comprising the second network

element to clear the first and second set of data if a time period expires. However, *AAPA* teaches

a system further comprising the second network element to clear the first and second set of data

if a time period expires (paragraphs 0002 and 0006-0009). Therefore it would have been obvious

to one of ordinary skill in the art at the time the invention was made to combine the distributed

process redundancy of *Kidder et al* with *AAPA* by further comprising the second network

element to clear the first and second set of data if a time period expires; because this data is

invalid and this prevents the system from processing invalid data.

b.   **Regarding claim 27,** *Kidder et al* and *Miller et al* teach the system of claim 24 as

applied above, yet fail to explicitly teach the system further comprising the second network

element to mark the first set of data as stale when the first network process dies. AAPA teaches

further comprising the second network element to mark the first set of data as stale when the first

network process dies (page 2, section 0002 and page 3, section 0006-0007). Therefore it would

have been obvious to one of ordinary skill in the art at the time the invention was made to further

modify the distributed process redundancy of Kidder et al. by further comprising the second

network element to mark the first set of data as stale when the first network process dies because

this data is invalid and this prevents the system from processing invalid data.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure: Saleh et al (6,973,023), Engel et al (6,681,389), Aronoff et al (2002/0049776),

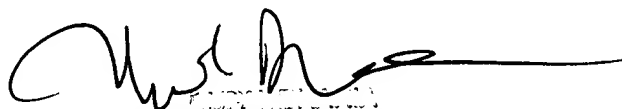Morton et al (4,864,557), Kudo et al (5,956,719).

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The

examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

kds

SUPERVISORY PATENT EXAMINER